Adopted Levels

History

Type	Author	Citation	Literature Cutoff Date
Full Evaluation	John Cameron, Jun Chen and Balraj Singh, Ninel Nica	NDS 113,365 (2012)	15-Jan-2012

Q(β^-)=1.640×10^4 *15*; S(n)=4.21×10^3 *16*; S(p)=1.79×10^4 *5*; Q(α)=−1.66×10^4 *syst* 2012Wa38

Note: Current evaluation has used the following Q record 16.40E3 15 *4*.21E3 16 *17*.86E348-16583 syst 2011AuZZ.

Estimated ΔQ(α)=608 (2011AuZZ).

Q(β^-n)=14156 *133*, S(2n)=6113 *139*, S(2p)=42609 *598* (syst) (2011AuZZ).

Values in 2003Au03: Q(β^-)=16530 *370*, S(n)=3910 *390*, S(p)=18770 *600* (syst), Q(α)=−17370 *940*, S(2n)=6070 *370*, S(2p)=44210 *1000* (syst), Q(β^-n)=14360 *350*.

Mass measurements: 2007Ju03, 2000Sa21 (also 2001Sa72), 1991Or01.

Radius and cross section measurements: 2006Kh08.

1991Or01: identification and production of ^{37}Al in Ta(^{48}Ca,X) at 55 MeV/nucleon, SPEG spectrometer at GANIL facility, energy loss and time-of-flight methods. Measured mass excess=9.60 MeV *54*.

1999YoZW: Fragmentation of 70 MeV/nucleon ^{48}Ca beam by Be and Ta targets. Projectile fragment separator at RIKEN facility, measured half-life and delayed-neutron emission probability.

2000Sa21 (also 2001Sa72): Fragmentation of 60 MeV/nucleon ^{48}Ca beam with Ta target, SPEG spectrometer at GANIL facility, energy loss and time-of-flight techniques. Measured mass excess.

2004Gr20 (also 2003Gr22): Fragmentation of 60 MeV/nucleon ^{48}Ca beam with Be target, LISE3 spectrometer at GANIL facility, energy loss and time-of-flight techniques. Measured isotopic half-life using β(fragment implant) correlations.

2006Kh08: Si(^{37}Al,X) E=42.94 and 37.42 MeV/nucleon. Measured cross sections and average radius at GANIL facility.

2007Ju03: Fragmentation of 60.3 MeV/nucleon beam with Ta target, SPEG spectrometer at GANIL facility. Measured mass excess=9810 *120*. Average value recommended=9830 *110*.

^{37}Al Levels

E(level)	$T_{1/2}$	Comments
0	10.7 ms *13*	%β^-=100; %β^-n=? %β^-n=55 *11* (tentative value measured by 1999YoZW). Predicted decay modes from calculations of 1997Mo25: %β^-n=6.3, %β^-2n=1.6. $T_{1/2}$: from β(fragment implant) correlations (2004Gr20). Other: 1999YoZW. J^π: 3/2$^+$ proposed from systematics (2011AuZY), 5/2$^+$ proposed in calculations of 1997Mo25. Only β^- decay mode seen by 2004Gr20. σ_R=2.42 b *8* at 42.94 MeV/nucleon, 2.47 b *13* at 37.42 MeV/nucleon (2006Kh08). Average r_0^2=1.16 fm^2 *3* (2006Kh08).